Dell Latitude E6420 XFR

Setup and Features Information



Regulatory Model: P21G
Regulatory Type: P21G001
MKW58 Rev. A02-01 - September 2011

Notes, Cautions, and Warnings

NOTE: A NOTE indicates important information that helps you make better use of your computer.

CAUTION: A CAUTION indicates either potential damage to hardware or loss of data and tells you how to avoid the problem.

WARNING: A WARNING indicates a potential for property damage, personal injury or death.

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Front View

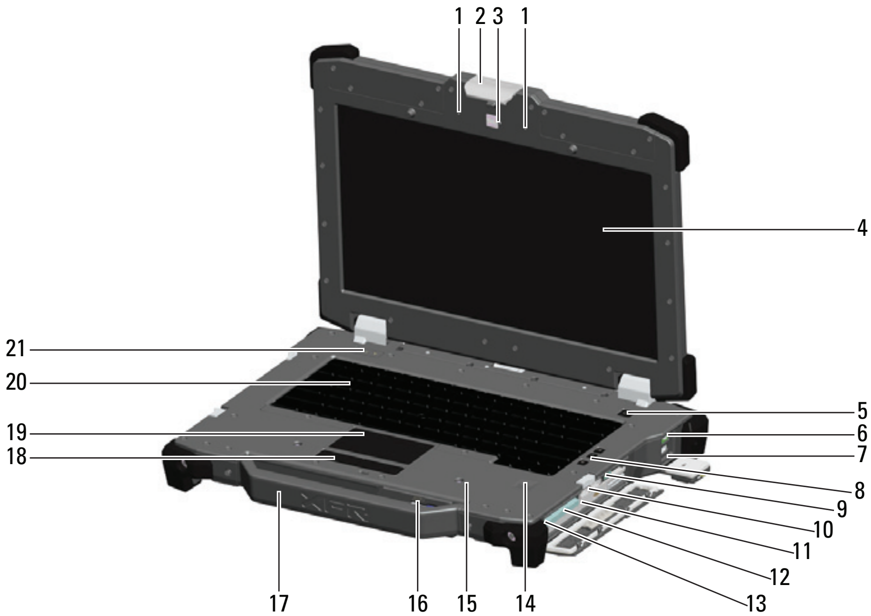


Figure 1. Front View

1. Microphones (2)
2. Display latch
3. Camera (optional) and camera status light
4. Direct Vue™ outdoor-readable display (optional touchscreen)
5. Power button
6. eSata/USB connector
7. HDMI connector
8. Volume control buttons
9. Wireless switch
10. USB connectors (2)
11. Media bay modules (optical drives, second hard drive, second battery, USB 3.0, legacy I/0 module)
12. Express card slot
13. Audio connector
14. Fingerprint reader (optional)
15. Contactless smart-card reader (optional) (see “Smart Cards” on page 13)
16. Secure Digital (SD) memory-card reader (see “Front Secure Digital Door” on page 11)
17. Handle
18. Touch pad buttons (2)
19. Touch pad
20. Backlit Keyboard (optional rubber backlit keyboard available)
21. Device status lights

Back View

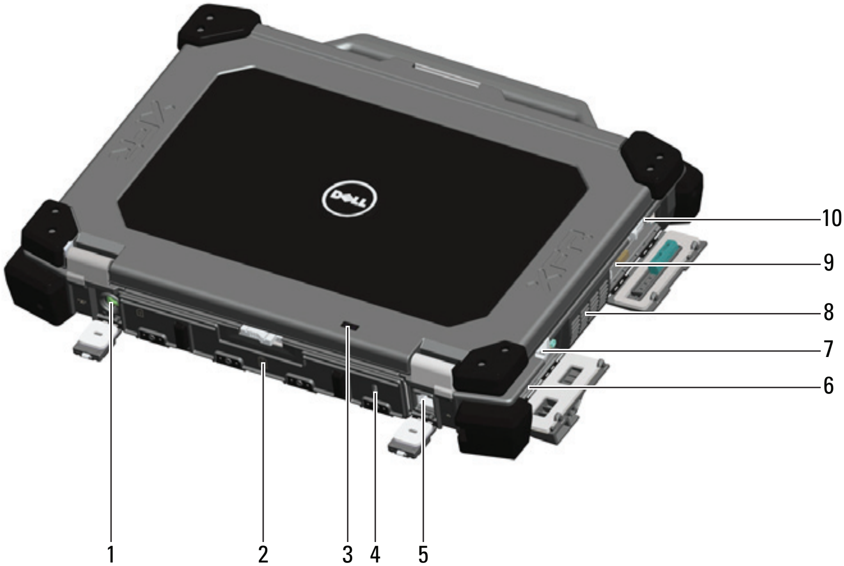


Figure 2. Back View

1. Power connector (⎓)
2. Battery access panel (see “Battery Removal” on page 7)
3. Power and battery status lights
4. Security cable slot
5. RJ-45 network connector (品)
6. Serial port connector (IOIOI)
7. VGA connector (I▭I)
8. QuadCool™ sealed thermal chamber
9. Hard Disk Drive (see “Hard Drive Removal” on page 9) (⌸)
10. Enclosed Smart-card reader (see “Smart Cards” on page 13) (SC)

⚠ **WARNING:** Do not block, push objects into, or allow dust to accumulate in the air vents. Do not store your Dell computer in a low-airflow environment, such as a closed briefcase, while it is running. Restricting the airflow can damage the computer or cause a fire. The computer turns on the fan when the computer gets hot. Fan noise is normal and does not indicate a problem with the fan or the computer.

Bottom View

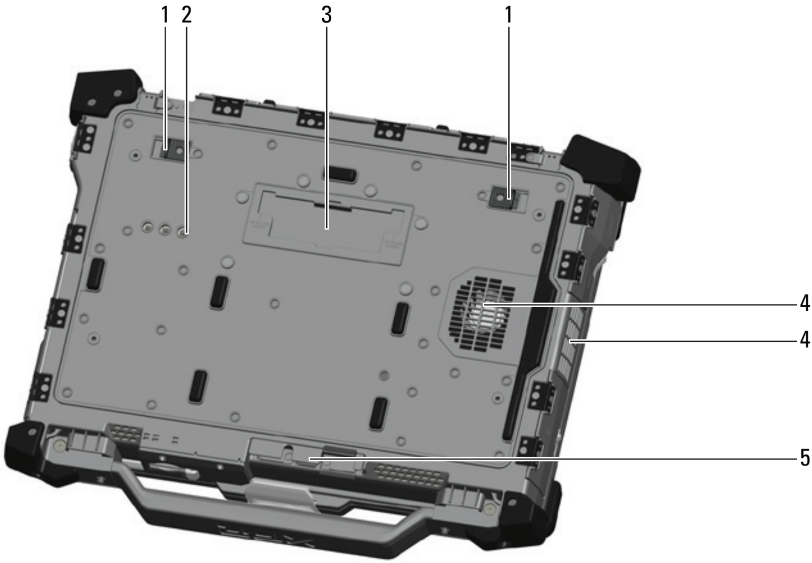


Figure 3. Bottom View

1. Battery latch release
2. RF pass-through connectors (see “RF Pass-Through” on page 14) (optional)
3. Sliding cover to docking device connector (see “Docking Device Connector Door” on page 10) (DOCK)
4. QuadCool™ sealed thermal chamber
5. Stylus holder

Battery Removal

⚠ **WARNING:** Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at www.dell.com/regulatory_compliance.

⚠ **WARNING:** Using an incompatible battery may increase the risk of fire or explosion. Replace the battery only with a compatible battery purchased from Dell. The battery is designed to work with your Dell computer. Do not use a battery from other computers with your computer.

⚠ **WARNING:** Before removing or replacing the battery, turn off the computer, disconnect the AC adapter from the electrical outlet and the computer, disconnect the modem from the wall connector and computer, and remove any other external cables from the computer.

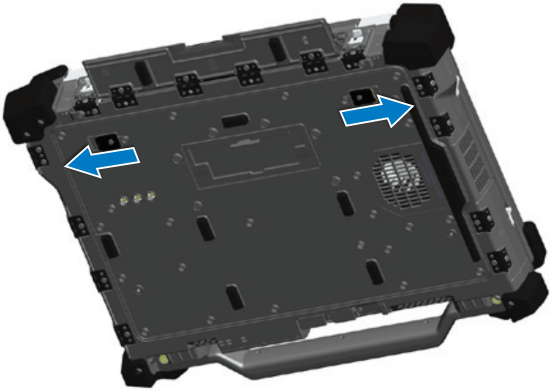
1 Release the rear panel by pushing the slide latch to the right. If the secondary latch is engaged, press in to disengage.



2 Lower the rear panel.



3 Press outward on the two battery release latches on the bottom of the computer.



4 Use the tab on the bottom of the battery to remove the battery to remove the battery from the computer.



Battery Installation

1 Insert battery until you hear a click and a mechanical stop.

2 Rotate the door into place.

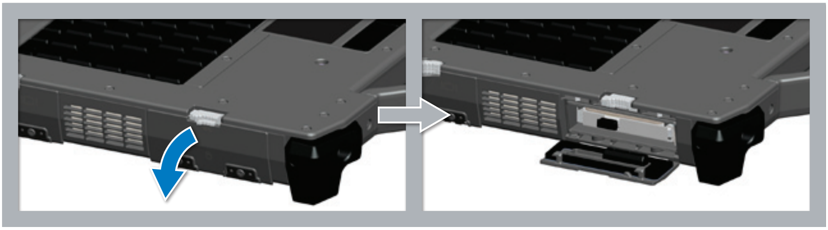
3 Ensure the door is in the fully closed and locked position.

Hard Drive Removal

⚠ **WARNING:** Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at www.dell.com/regulatory_compliance.

⚠ **WARNING:** Before removing or replacing the hard drive, turn off the computer, disconnect the AC adapter from the electrical outlet and the computer, disconnect the modem from the wall connector and computer, and remove any other external cables from the computer.

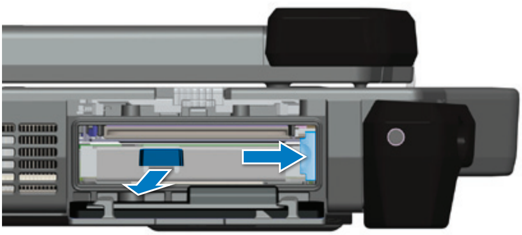
1 Open the hard drive access slide-latch door located on the left side panel by pushing the latch towards the rear of the computer, and rotate door down and open.



NOTE: See hard drive removal instructions on the sticker on the front face of the hard drive

2 Press in the blue locking button on the right side of the compartment.

3 While pressing in the blue locking button, use the tab in the center of the hard drive to pull the hard drive from the compartment.



Hard Drive Installation

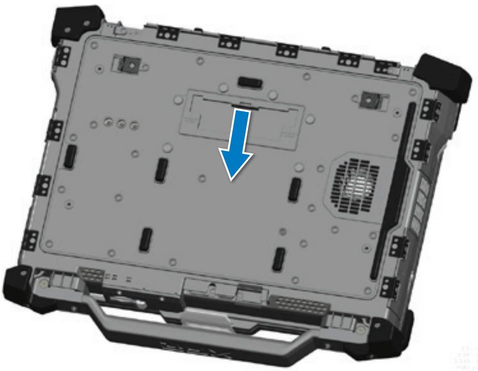
1 Insert hard drive until you hear a click and a mechanical stop.

2 Rotate the door into place and press until it clicks into its closed position.

Operating the PrimoSeal™ Doors

Docking Device Connector Door

The docking device connector door (DOCK) is opened by sliding the door towards the front of the computer to its fully open position. Reverse this procedure to close the door. Be sure the door is fully closed by sliding door until it reaches a mechanical stop.

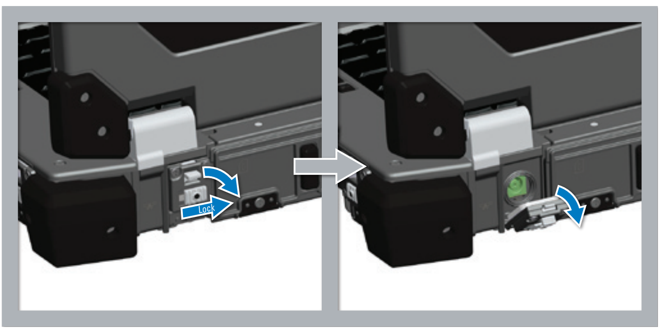


Press-Latch Doors

There are three press-latch doors. Two on the back (power and RJ45) and one on the right side panel (HDMI HDMI and eSATA eSATA). The press-latch door is opened by:

- **a** Unlock the door by pushing the slide-lock to the left (the latch is locked when slid to the right
- **b** Open the door by pressing down on the latch and pulling the door away from the computer.

To close the door, rotate the door back towards the computer and press until it is in its fully closed position. Engage the slide-lock by pushing to the right until the lock symbol is visible.

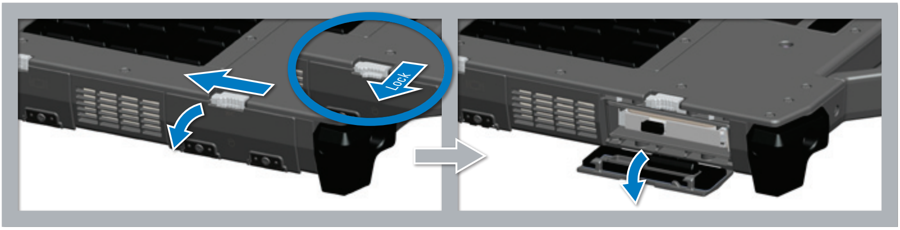


Slide Latch Doors

There are three slide-latch doors on the unit, two on the left side and one on the right side. To open the slide-latch doors:

a Ensure the door is unlocked by pushing the slide-latch in (the latch is locked when slid outward from the system)

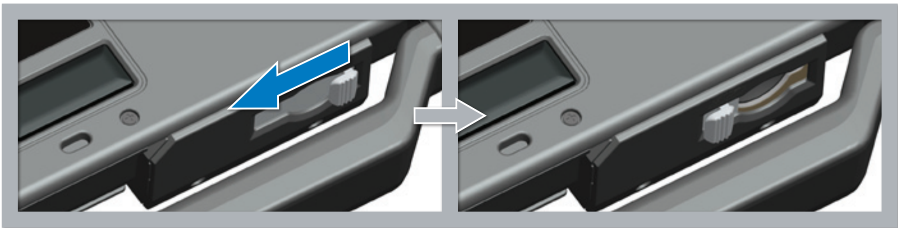
b Open the slide-latch door by sliding the latch towards the rear of the computer, and then rotating the door down.



To close the door, rotate the door back into its closed position and press until you hear it click into position. If desirable, lock the slide-latch door by pulling the slide-latch out.

Front Secure Digital Door

The secure digital (SD) door is located at the front of the computer behind the handle.



To open the secure digital door, first pull the handle out to its fully extended and locked position for easier access to the door. Slide the latch to the left to open. To close, slide the latch to the right until it clicks into place.

The Secure Digital card can be fully inserted, allowing the protective door to be closed. Insert the card into the secure digital slot until it is fully seated in its connector. To release the secure digital card, press in on the card edge and the reader will eject the card.

Reverse the procedure to close the protective door, pulling the handle out to its fully extended and locked position for easier access to the door.

Quick Setup

WARNING: Before you begin any of the procedures in this section, read the safety information that shipped with your computer. For additional best practices information, see www.dell.com/regulatory_compliance.

WARNING: The AC adapter works with electrical outlets worldwide. However, power connectors and power strips vary among countries. Using an incompatible cable or improperly connecting the cable to the power strip or electrical outlet may cause fire or equipment damage.

CAUTION: When you disconnect the AC adapter cable from the computer, grasp the connector, not the cable itself, and pull firmly but gently to avoid damaging the cable. When you wrap the AC adapter cable, ensure that you follow the angle of the connector on the AC adapter to avoid damaging the cable.

NOTE: Some devices may not be included if you did not order them.

NOTE: It is recommended that you turn on and shut down your computer at least once before you install any cards or connect the computer to a docking device or other external device, such as a printer.

1 Connect the AC adapter to the AC adapter connector on the computer and to the electrical outlet.

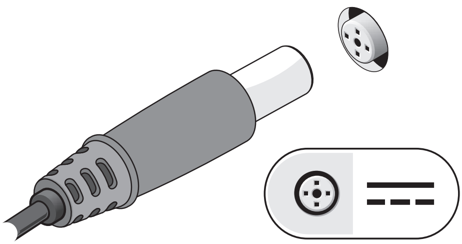


Figure 4. AC Adapter

2 Connect the network cable. (optional)

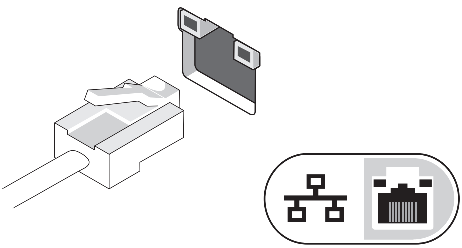


Figure 5. Network Connector

3 Connect USB devices, such as a mouse or keyboard. (optional)

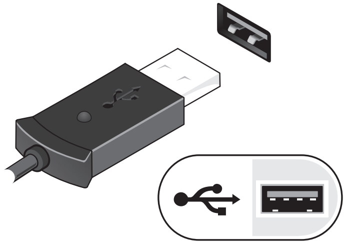


Figure 6. USB Connector

4 Open the computer display and press the power button to turn on the computer.

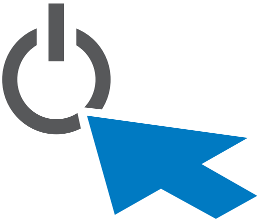


Figure 7. Power Button

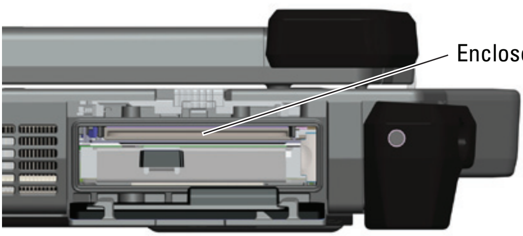
NOTE: It is recommended that you turn on and shut down your computer at least once before you install any cards or connect the computer to a docking device or other external device, such as a printer.

Smart Cards

There are two main types of Smart or Common Access Cards (CAC):

1 Enclosed Smart Cards (SC) — these cards have a contact area with many gold plated connection pads. When inserted into a card reader, the information from the chip can be read and written.

The Enclosed Smart Card is accessed through the left front side door above the hard drive.



The Smart Card can be fully inserted, allowing the protective hinged door to be closed.

Insert the card into the smart card slot with the gold contact pad facing upward and pointing toward the smart card slot. Slide the card into the slot until it is fully seated in its connector.

Pull the smart card from the bottom to remove.

2 Contactless Smart Cards ( ) — these cards do not require any physical contact with the reader. The chip communicates with the card reader through RFID induction technology. These cards require only close proximity to an antenna of a card reader to complete transactions.

The Contactless Smart Card access is provided to the right of the keyboard touch pad.

RF Pass-Through

In the event the computer has an integrated WiFi and/or Broadband radio, the RF signals can be passed through a docking station to external TNC antenna connectors (LAN/WAN/GPS). This supports the connection and use of external, vehicle-mounted antennas (purchased separately) for improved radio performance.

Direct Vue™ Touch Display Information

The computer provides an optional touch screen display for entering and selecting data using an approved pointing device such as your finger, a passive stylus or any non-abrasive smooth blunt object that will not damage the touch display.

NOTE: To ensure you properly care for and maintain your touch display, adhere to the care instructions regarding the display.

WARNING: The optional Direct Vue™ Touch Display has been designed to accept finger touch as well as passive stylus input directly onto the screen. With the optional Direct Vue™ touch display, a stylus is included with the computer for use in selecting items on the touch screen. Other pointing devices can be used with the touch screen such as any non-abrasive, smooth or blunt object that will not damage the touch screen display. The touch screen surface can be damaged by ink pens, marker pens or other pointed or abrasive objects. The use of non-approved input devices that cause damage to the digitizer or LCD may not be covered by the limited warranty.

The touch screen is pre-configured and pre-calibrated at the factory, but may require further calibration to improve accuracy for entering or selecting data on the touch display. Please see “Tools” on page 16 for information on Calibrating your Touch Display and using your stylus.

Accessing Drivers and Documentation

Your Direct Vue Touch Display’s drivers, touch-input parameters and documentation have been pre-loaded at the factory. For experienced users or IT administrators - if you need to

re-install drivers, set up your touch display or modify parameters please refer to the pre-loaded eGalaxTouch utility documentation for detailed instructions and refer to the summary provided in "eGalaxTouch Configuration Utility".

You can launch the pre-loaded documentation by selecting
Start -> All Programs -> eGalaxTouch -> Document.

eGalaxTouch Configuration Utility

Your Direct Vue touch display system incorporates EETI technology. eGalaxTouch is a software utility tool that allows you to configure various touch features.

You can launch eGalaxTouch by clicking
Start -> All Programs -> eGalaxTouch -> Configure Utility.

NOTE: The touch screen is pre-configured and pre-calibrated at the factory, but may require further calibration to improve accuracy for entering or selecting data on the touch display, or to further configure it to your specific application.

Please refer to the pre-loaded documentation for the eGalaxTouch configuration utility for a complete description of all its capabilities and functionality.

You can launch the pre-loaded documentation for the eGalaxTouch Configuration Utility by selecting *Start -> All Programs -> eGalaxTouch -> Document -> User Guide for Windows 2000/XP/Vista -> eGalaxTouch Utility*.

The eGalaxTouch utility consists of tabs that allow you to determine the best settings for your touch screen configuration.

- The "General" tab shows all of the touch screen controllers installed in your system
- The "Tools" tab provides access to calibration and touch position tools.
- The "Setting" tab provides access to the configuration of beeps, clicks and mouse emulation as well as selection of 9 point or 25 point calibration for linearization.
- The "Display" tab provides the tools for mapping the touch screen area to specific areas of the display. The default is full screen.
- The "Edge Parameters" tab provides configuration for selecting items near the edge of the touch screen.
- The "Hardware" tab provides the model and firmware version of the touch screen controller.
- The "About" tab provides the version of the driver as well as providing a link for downloading the latest driver.

General

The general property page shows all the eGalaxTouch touch screen controllers installed including RS232, USB and PS2 interfaces. The touch screen controller is a USB device.

Tools

The Tools property page provides the following information and functions.

NOTE: Your touch screen is configured and calibrated at the factory. However, if you notice that the calibration is not as precise as you would like, you can use the 4 Points Calibration and/or the Linearization tool to provide a more accurate alignment of the touch screen.

- Graph of the **Linearization Curve** of the touch screen: For reference and troubleshooting purposes. See its usage in the discussion of the Linearization function.
- **4 Points Calibration**: Calibration aligns the touch panel with the video screen. The touch screen must be calibrated to allow for positional accuracy of the stylus or finger touch inputs.
- **Clear and Calibrate**: Clears the calibration/linearization parameters and allows you to perform the 4 points calibration again.
- **Linearization** (9 or 25 points linearization is set within the "Setting" tab): The linearization function provides for more precise mapping of the stylus or finger touch inputs. After linearization is completed, the linearity of the touch screen will be shown in the Linearization Curve window.
- **Draw Test:** Used for accuracy and performance checking.

1 **4 Points Calibration**
The touch screen must be calibrated before it can work accurately. This function pops up a new window to guide you through the 4 points calibration. You should follow the guide to touch and hold the blinking X symbol in the calibration window until it does not blink to make sure that the utility can gather enough data for computation. In addition, a time line bar is shown in the bottom of the window to indicate time elapsed. If the touch screen is not touched before the time line bar reaches the right end, the calibration task will be terminated automatically.

2 **Linearization**
This function provides for more accurate touch screen positional alignment. The linearization function pops up a new window to guide you through the 9 or 25 points calibration. Configuring the function for 9 or 25 points calibration is accessed in the "Setting" tab. You should follow the guide to touch and hold the blinking X symbol in the calibration window until it does not blink to make sure that the utility can gather enough data for computation. In addition, a time line bar is shown in the bottom of the window to indicate the time elapsed. If the touch screen is not touched before the time line bar reaches the right end, the calibration task will be terminated automatically.

3 **Draw Test**
This function is used for accuracy and performance checking. You can use the stylus or finger touch to draw or write across the displayed area.

You can press the Clear button to clear the window. Press the Quit button to terminate the draw test.

Setting

The Setting property page provides the following buttons and check boxes:

1 **Beep**

- **Beep On Touch**
  Check this check box to enable driver to generate a beep sound when touch touchscreen state is switched from untouched to touched state.
- **Beep On Release**
  Check this check box to enable driver to generate a beep sound when touchscreen state is switched from touched state to untouch state.
- **Frequency**
  Adjust this frequency to control the beep sound frequency generated by the driver.
- **Duration**
  Adjust this duration to control the beep sound duration.

2 **Linearization Style**
The eGalaxTouch utility provides you with both 9 points and 25 points calibration for linearization. You can select the suitable kind of linearization type with this setting. The Linearization function is accessed under the “Tools” tab.

3 **Double Click Time**
The double Click Time group is used to set system double click time. Changing this value will affect the double click behavior for all of the mice devices in the system. Two continuous clicks at the same area within this specified time period will be recognized as a double click event.

4 **Double Click Area**
The double click area group is used to set the system double click area. Changing this value will affect the double click behavior for all of the mice devices in the system. Two continuous clicks within the specified area in the specified double click time will be recognized as a double click event.

5 **Mouse Emulation mode**
There are 5 mouse emulation modes for the eGalaxTouch touch screen controllers. Press on the button to change the emulation mode.

- **Normal Mode**
  You can select this mode to select objects, and drag objects.
- **Click On Touch**
  With this Click On Touch mode, the driver emulates a mouse click event when the touch screen state is switched from un-touched state to touched state. Then, the driver always generates a mouse move event and tracks the touch position until the touch screen state switches to the un-touch state.
- **Click On Release**
  With this Click On Release mode, the driver emulates a mouse click event when the touch screen state is switched from touched state to un-touched state.

- **Click On Touch without moving cursor**
  With this mode, the driver behaves similarly to the Click On Touch mode. The cursor does not move to the touch position except for the first touch point.
- **Click On Release without moving cursor**
  With this mode, the driver behaves similarly to the Click On Release mode. The cursor does not move to the touch position except for the lift-off point.

6 **Option**
You can access advanced configuration functions with the Option button. Press the button, and the following window will appear.

Display

The eGalaxTouch driver supports multiple monitor and display systems. To work with multiple monitor systems, you need to perform the proper configuration to map the touch screen working area to the correct system display area using the Display property page.

Edge Parameters

For some special touch screen applications where the edge area of the full screen cannot be reached, eGalaxTouch provides you with this edge compensation tool to solve the problem and allow for touching the edge area without accuracy loss.

Hardware

The Hardware property page shows the model and firmware version of the eGalaxTouch controller. The software will query the hardware information from the controller and show the information as illustrated here.

About

The About property page shows information regarding the eGalaxTouch driver, including providing a link to allow you to download the latest driver.

Specifications

NOTE: Offerings may vary by region. The following specifications are only those required by law to ship with your computer. For more information regarding the configuration of your computer, click Start > Help and Support and select the option to view information about your computer.

System Information	
Chipset	Intel Mobile Express Series 6 chipset
DRAM bus width	64-bit
Flash EPROM	SPI 32 Mbits
PCIe Gen1 bus	100 MHz
Processor	
Types	• Intel Core i3 series • Intel Core i5 series • Intel Core i7 series
L2 cache	Up to 6 MB
External bus frequency	1333 MHz
Memory	
Memory connector	Two SODIMM slots
Memory capacity	1 GB, 2 GB, or 4 GB
Memory type	DDR3 SDRAM (1333 MHz)
Minimum memory	2 GB
Maximum memory	8 GB
Audio	
Type	four-channel high definition audio
Controller	IDT 92HD90
Stereo Conversion	24-bit (analog-to-digital and digital-to-analog)
Interface:	
Internal	high definition audio
External	microphone-in/stereo headphones/external speakers connector ( )
Speakers	two
Internal speaker amplifier	0.5 W (typical) per channel
Volume controls	keyboard function keys, program menus
Video	
Video type	• integrated on system board • discrete

Video	
Data bus	
UMA	integrated video
Discrete	• PCI-E x16 Gen1 • PCI-E x16 Gen2
Video controller	
UMA	Intel® HD Graphics 3000
Discrete	NVIDIA® NVS™ 4200M Discrete Graphics (512 MB DDR3)
Output	• 15-pin VGA connector • 19-pin HDMI connector

Communications	
Network adapter	10/100/1000 Mbps Ethernet LAN
Wireless	internal wireless local area network (WLAN) and wireless wide area network (WWAN)

Ports and Connectors	
Audio	one microphone connector/stereo headphones/ external speakers connector **WARNING:** Excessive sound pressure from earphones and headphones can cause hearing loss.
Video	• one 15-pin VGA connector • one 19-pin HDMI connector
Network adapter	one RJ-45 connector
USB	• two 4-pin USB 2.0-compliant connectors • one eSATA/USB 2.0-compliant connector (eSATA)
Serial	one DB9 pin serial (RS232)
Memory card reader	one 5-in-1 memory card reader

Display	
Type	white Light Emitting Diode (WLED) display
Size	14.0 inch high definition (HD)
Active area (X/Y)	309.4 mm x 173.95 mm
Dimensions:	
Height	192.50 mm (7.58 inches)
Width	324.00 mm (12.76 inches)
Diagonal	355.60 mm (14.00 inches)
Maximum resolution	1366 x 768

Display	
Maximum Brightness	Non-Touch: 730 nits Touch: 630 nits
Operating angle	0° (closed) to 135°
Refresh rate	60 Hz
Minimum Viewing angles:	
Horizontal	+/- 50°
Vertical	+/- 40°
Pixel pitch	0.2265 mm
Keyboard	
Number of keys	United States: 86 keys, United Kingdom: 87 keys, Brazil: 87 keys, and Japan: 90 keys
Layout	QWERTY/AZERTY/Kanji
Touchpad	
Active Area	
X-axis	80.00 mm
Y-axis	40.70 mm
Battery	
Type	6-cell “smart” Lithium ion
Dimensions	
Depth	48.08 mm (1.89 inches)
Height	20.00 mm (0.79 inch)
Width	208.00 mm (8.19 inches)
Weight	344.73 g (0.76 lb)
Charge time with computer off	approximately 1 hour to 80% capacity and 2 hours to 100% capacity (with 90W adapter).
Voltage	11.10 VDC
Temperature range:	
Operating	0°C to 60°C (32°F to 140°F)
Non-Operating	–51°C to 71°C (–59°F to 159°F)
Coin-cell battery	3V CR2032 lithium coin cell
AC Adapter	
Type	90 W
Input voltage	100 VAC to 240 VAC

AC Adapter	
Input current (maximum)	1.50 A, 1.60 A, and 1.70 A
Input frequency	50 Hz to 60 Hz
Output power	90 W
Output current	4.62 A (continuous)
Rated output voltage	19.5 +/– 1.0 VDC
Temperature range:	
Operating	0 °C to 40 °C (32 °F to 104 °F)
Non-Operating	–40 °C to 70 °C (–40 °F to 158 °F)

Physical	
Height	56.80 mm (2.6 inches)
Width	356.1 mm (14.0 inches)
Depth	296 mm (11.7 inches)
Weight (solid state drive)	3.99 kg (8.8 lb)

Environmental	
Temperature:	
Operating	0 °C to 35 °C (32 °F to 95 °F)
Storage	-51 °C to 71 °C (-59 °F to 159 °F)
Relative humidity (maximum):	
Operating	10 % to 90 % (non condensing)
Storage	5 % to 95 % (non condensing)
Altitude (maximum):	
Operating	-15.2 m to 3048 m (-50 ft to 10,000 ft)
Operating (SSD)	-15.2 m to 4572 m (-50ft to 15,000 ft)
Non-Operating	-15.2 m to 10,668 m (-50 ft to 35,000 ft)
Airborne contaminant level	G1 as defined by ISA S71.04–1985

Finding More Information and Resources

This section is the last part of the SFITS

See the safety and regulatory documents that shipped with your computer and the regulatory compliance website at www.dell.com/regulatory_compliance for more information on:

- Safety best practices for your computer
- Warranty
- Terms and Conditions
- Regulatory
- Ergonomics
- End User License Agreement